



Australian Government

AURTTE004 Inspect and service engines

Release: 1

AURTTE004 Inspect and service engines

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to inspect and service engines. It involves preparing for the task, inspecting the engine, reporting the inspection findings, servicing and adjusting the engine, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The engines include those of agricultural machinery, heavy commercial vehicles, light vehicles, mobile plant or motorcycles. The unit does not apply to outdoor power equipment engines.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Engines

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Prepare to inspect and service engine	1.1 Job requirements are determined from workplace instructions 1.2 Servicing information is sourced and interpreted 1.3 Hazards associated with the work are identified and risks are managed 1.4 Tools, equipment and materials are selected and checked for

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
	serviceability
2. Inspect engine	2.1 Inspection is carried out according to manufacturer specifications, workplace procedures and safety requirements 2.2 Inspection results are compared with manufacturer specifications 2.3 Inspection findings are reported according to workplace procedures, including recommendations for necessary repairs or adjustments
3. Service engine	3.1 Service and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems 3.2 Post-service testing is carried out according to workplace procedures
4. Complete work processes	4.1 Final inspection is made to ensure work is to workplace expectations and vehicle or machinery is presented ready for use 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures 4.4 Workplace documentation is processed according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	locate appropriate sources of information efficiently.
Reading skills to:	interpret information from manufacturer and workshop literature when seeking engine service procedures and specifications.
Writing skills to:	legibly and accurately fill out workplace documentation when reporting inspection findings, making recommendations, and recording parts and material used.

Skills	Description
Oral communication skills to:	- clarify instructions - report inspection findings and make repair recommendations.
Numeracy skills to:	calculate liquid volumes and service schedule intervals, using mathematical operations, including addition and subtraction.

Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

<i>Inspection</i> must include:	- pre- and post-service inspections for oil and fluid leaks - analysing abnormal engine noises - inspecting ancillary components.
<i>Safety requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for working with: - rotating and hot components - engine oils - high energy ignition and charging systems.
<i>Service</i> must include:	replacing oil and oil filter.
<i>Environmental requirements</i> must include:	procedures for trapping, storing and disposing of fluids released from engines.
<i>Post-service testing</i> must include:	- starting up and running engine to operating temperature - checking for leaks and abnormal noises.

Unit Mapping Information

Equivalent to AURTTE2004 Inspect and service engines

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTE004 Inspect and service engines

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Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- inspect and service the engines of two different vehicles or machinery, including replacing the engine oil and filters.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to inspecting and servicing engines, including procedures for working with:
 - rotating and hot components
 - engine oils
 - high energy ignition and charging systems
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from engines
- identification and function of major engine components, including:
 - cylinder block and head
 - piston and connecting rod
 - crankshaft
 - valve train
 - manifolds
 - ports and reed valve
- identification and function of engine systems, including:
 - lubrication
 - cooling system

- fuel system
- air system
- basic operation of spark ignition engines and compression ignition engines, including:
 - two-stroke spark ignition engines
 - four-stroke spark ignition engines
 - four-stroke compression ignition engines
- types and applications of engine configurations, including:
 - two-stroke spark ignition engines
 - four-stroke spark ignition engines
 - four-stroke compression ignition engines
- types and applications of engine oils and filters
- inspection procedures for engines, including:
 - oil and fluid leaks
 - ancillary components, including:
 - mountings
 - belts, pulleys and hoses
- service and adjustment procedures for engines, including:
 - adjusting or replacing engine components
 - replacing oil
 - replacing filter
- post-service testing procedures for engines.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engines that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer engine specifications
- two different vehicles or machinery with engines requiring servicing
- tools, equipment and materials appropriate for inspecting and servicing engines.

Links

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